

B. Amendment to the Claims

Please amend claims 1, 9, 50, 61 and 63 as follows.

1. (Currently Amended) A structure comprising:  
a first portion containing a polymer; and  
a second portion formed on the first portion,  
wherein the second portion has tubular pores, and the tubular pores are  
aligned uniaxially and extend along a boundary surface between the first portion and the  
second portion.
2. (Previously Presented) The structure according to claim 1, wherein  
the second portion contains silicon.
3. (Cancelled)
4. (Previously Presented) The structure according to claim 1, wherein  
the polymer is aligned in a direction, which is different from an alignment direction of the  
tubular pores.
5. (Currently Amended) The structure according to claim 4, wherein  
the polymer alignment direction and the tubular pores alignment direction are substantially  
orthogonal to each other.
- 6-8. (Cancelled)

9. (Currently Amended) The structure according to claim 1, wherein the first portion contains ~~contains~~ at least one of polyethylene, nylon, polybutylene terephthalate, polyethylene terephthalate, polyester, polyimide and parylene polyparaxylilene.

10. (Cancelled)

11. (Previously Presented) The structure according to claim 1, further comprising a substrate on which the first portion is formed.

12. (Previously Presented) The structure according to claim 11, wherein the substrate is made of a glass.

13. (Previously Presented) The structure according to claim 1, wherein a surfactant is held in the tubular pores.

14. (Previously Presented) The structure according to claim 13, wherein the surfactant is a cationic surfactant or a nonionic surfactant.

15-18. (Cancelled)

19. (Previously Presented) The structure according to claim 13, wherein the first portion is comprised of a Langmuir-Blodgett film.

20. (Previously Presented) The structure according to claim 13, wherein the first portion comprises at least one of polyethylene, nylon, polybutylene terephthalate, polyethylene terephthalate, polyester, polyimide and parylene polyparaxylilene.

21. (Previously Presented) The structure according to claim 20, wherein the polymer is polyimide.

22. (Previously Presented) The structure according to claim 13, wherein the pores are hollow.

23. (Previously Presented) The structure according to claim 13, wherein the first portion is constituted of a film of a polymer material, the film being arranged on a substrate, and the substrate is made of silicon oxide.

24. (Withdrawn) A process for forming a mesostructured material having tubular mesopores comprising steps of:

(i) providing a polymeric surface subjected to an alignment control treatment; and

(ii) bringing the polymeric surface into contact with a solution containing a surfactant and an alkoxide, hydrolyzing the alkoxide and forming the mesostructured material on the surface.

25. (Withdrawn) The process according to claim 24, wherein the step (i) comprises the sub-step of rubbing a polymeric surface as the alignment control treatment.

26. (Withdrawn) The process according to claim 24, wherein the step (i) comprises a sub-step of providing a polymeric surface constituted of a Langmuir-Blodgett film.

27. (Withdrawn) The process according to any one of claims 24 to 26, wherein the step (ii) includes a step of immersing the polymeric surface into the solution.

28. (Withdrawn) The process according to any one of claims 24 to 26, wherein the polymeric surface contains at least one polymer selected from the group consisting of polyethylene, nylon, polybutylene terephthalate, polyethylene terephthalate, polyester, polyimide and parylene polyparaxylilene.

29. (Withdrawn) The process according to claim 28, wherein the polymeric surface contains polyimide.

30. (Withdrawn) The process according to claim 24, further comprising a step of removing the surfactant within the mesopores and hollowing the mesopores.

31. (Withdrawn) The process according to claim 30, wherein the step of removing the surfactant within the mesopores includes calcining the mesostructured material resulting from the step (ii).

32. (Withdrawn) The process according to claim 30, wherein the step of removing the surfactant within the mesopores includes extracting the surfactant within the mesopores with a solvent from the mesostructured material resulting from the step (ii).

33. (Withdrawn) The process according to claim 30, wherein the step of removing the surfactant within the mesopores includes extracting the surfactant within the mesopores with a critical fluid from the mesostructured material resulting from the step (ii).

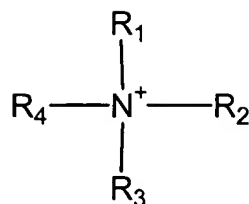
34. (Withdrawn) A process for forming a mesostructured silica having tubular mesopores comprising the steps of:

- (i) providing a polymer material surface in which chains of the polymer material are oriented to a first direction parallel to the polymer material surface; and
- (ii) forming a mesostructured silica having tubular mesopores on the polymeric surface, the mesopores being filled with a surfactant and oriented towards a second direction nearly perpendicular to the first direction, by forming an oriented rod-like surfactant micelle structure outside of which silica locates on the polymer material surface, the orientation of the rod-like surfactant micelle structure being determined by parallel accommodation of molecules of the surfactant on the chains of the polymer material through chemical interaction.

35. (Withdrawn) The process according to claim 34, wherein the surfactant is a cationic surfactant or nonionic surfactant.

36. (Withdrawn) The process according to claim 35, wherein the cationic surfactant is a quaternary alkylammonium salt.

37. (Withdrawn) The process according to claim 36, wherein the quaternary alkylammonium is represented by the following structural formula:



wherein R<sub>1</sub> to R<sub>3</sub> are independently a methyl group or ethyl group and R<sub>4</sub> is a C10 to C18 straight chained alkyl group.

38. (Withdrawn) The process according to claim 37, wherein R<sub>4</sub> is a C12 to C16 straight alkyl group.

39. (Withdrawn) The process according to claim 35, wherein the nonionic surfactant is an alkylamine or a surfactant containing or polyethylene oxide as a hydrophilic group.

40. (Withdrawn) The process according to claim 34, wherein the step (i) is a step of providing a Langmuir-Blodgett film of a polymer compound on a prescribed substrate.

41. (Withdrawn) The process according to any one of claims 34 to 40, wherein the polymer material is at least a polymer selected from the group consisting of polyethylene, nylon, polybutylene terephthalate, polyethylene terephthalate, polyester, polyimide and parylene polyparaxylilene.

42. (Withdrawn) The process according to claim 41, wherein the polymer material is polyimide.

43. (Withdrawn) The process according to claim 34, wherein the step (ii) is a step of hydrolyzing an alkoxysilane while the surface of the polymeric compound is in contact with a solution containing a surfactant and the alkoxysilane.

44. (Withdrawn) The process according to claim 34 further comprising a step of removing the surfactant in the mesopores.

45. (Withdrawn) The process according to claim 44, wherein the surfactant is removed by calcining the mesostructured silica obtained in the step (ii).

46. (Withdrawn) The process according to claim 44, wherein the surfactant is removed from mesostructured material obtained in the step (ii) by extracting with a solvent.

47. (Withdrawn) The process according to claim 44, wherein the surfactant is removed from the mesostructured material obtained in the step (ii) by critical fluid extraction.

48. (Previously Presented) The structure according to claim 11, wherein the tubular pores are parallel to the substrate.

49. (Cancelled)

50. (Currently Amended) The structure according to claim 48, wherein axes of the tubular pores  $[[A]]$  are oriented in a direction parallel to a surface of the substrate.

51-52. (Cancelled)

53. (Withdrawn) A process for controlling an orientation of tubular mesopores of a mesostructured material comprising the step of hydrolyzing an alkoxide while a polymeric surface which has been rubbed, is in contact with a solution containing a surfactant and the alkoxide.

54. (Withdrawn) A process for controlling an orientation of tubular mesopores of a mesostructured material comprising a step of hydrolyzing an alkoxide while a polymeric surface constituted of a polymeric compound whose polymer chains have been oriented towards a prescribed direction parallel to the polymeric surface, is in contact with a solution containing a surfactant and the alkoxide.

55-60. (Cancelled)

61. (Currently Amended) The structure according to claim 1, wherein the second portion has one end at one side and another end at another side and the tubular pores extend through from said one end to said another end [[A]].

62. (Previously Presented) The structure according to claim 1, wherein the tubular pores are mesopores.

63. (Currently Amended) A structure comprising:  
a substrate;



a portioned formed on the substrate,  
wherein the portion has tubular pores, and the tubular pores are aligned  
uniaxially and extend along a boundary surface between the portion and the substrate.